Human Factors

research and technology division

Emergency and Abnormal Situations

Objective

To inform the development, design, evaluation, implementation, training, and use of flight crews' procedures for abnormal and emergency situations. To suggest ways that communication and coordination that must exist between the pilots and all others involved in dealing with such situations (e.g., cabin crew, ATC, dispatch, and maintenance).

Approach

Bring together knowledge of the nature and demands of emergency and abnormal situations, an understanding of human learning and performance (particularly stress), and knowledge of the operational environment. To that end, we are conducting several focused studies designed to address various issues such those related to the following areas:

- Philosophies and policies of dealing with emergencies and abnormal situations (including economic and regulatory pressures)
- The development, structure, design, types, availability and use of checklists and procedures
- Human performance abilities and limitations under high-stress conditions
- The use of automation during emergencies and abnormal situations

Impact

Checklists, procedures, and training programs which are sensitive to human performance considerations and to the true nature of emergency conditions will support flight and cabin crews (and others involved including air traffic controllers, dispatchers, and maintenance personnel) as they deal with emergency and abnormal situations.

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